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26TH ANNUAL | SALARY SURVEY

COVER STORY

IT Picks Up the Pace

16 A resurgent tech industry holds both promise and peril for IT workers. Here's why.

Compare Your Pay

21 Check out salary figures for more than 40 IT job titles, as well as data by region and industry.

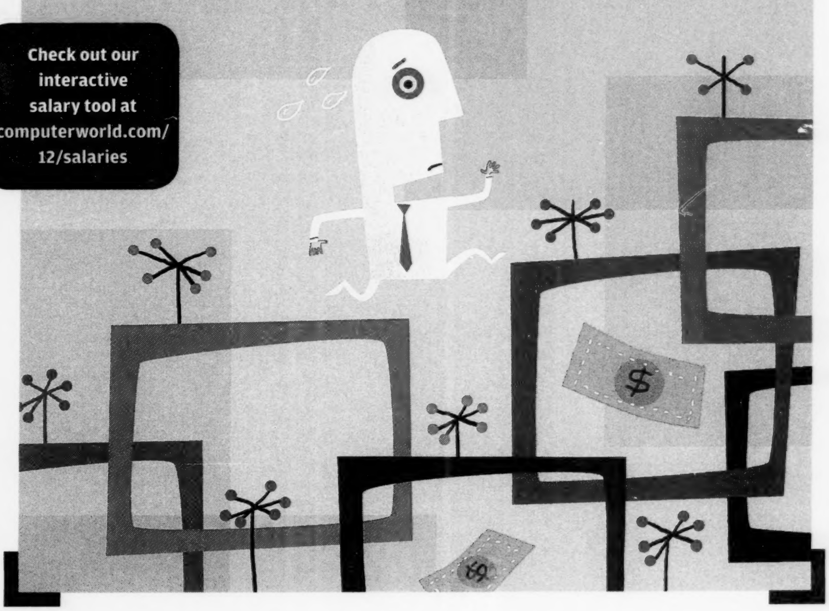
Stressing Over Skills

26 After years of training cuts, IT pros fret that they don't have the skills employers demand.

Benefits Go Bust

28 Shrinking bonuses and benefits leave IT workers running hard just to stay in place.

OPINIONS | **25** Hiring managers should call off the quest for that elusive "purple squirrel," advises **Jack Cullen** of Modis. | **32** IT employees want to feel connected to initiatives the business cares about most, says **Rachel Russell** of TEKsystems.



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HEADS UP | **2** **Robot fans** get their own app store. | Most breach victims fail to follow **common-sense security** practices. | **4** USC's online classes **go mobile.** | AOL decommissions **10,000 servers** and saves $5 million.

NEWS ANALYSIS | **6** **BYOD** is a top priority at IBM, says CIO Jeanette Horan. | **8** IT learns to make the most of on-the-job **social networking.**

OPINION | **40** **Thornton A. May** ushers CIOs into the coming age of disruption.

DEPARTMENTS | **10** **The Grill:** Boston Public Schools CIO Melissa P. Dodd | **36** **Career Watch** | **38** **Shark Tank**

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ONLINE EDUCATION

USC's Web-based Classes Go Mobile

THE University of Southern California has added a mobile component to its Web-based courses. Students who are taking online classes toward master's degrees in social work or education can now use smartphones or tablets to stay on top of their work.

To do so, they have to download an application created by 2tor, an educational software provider that also works with online programs at Georgetown University and the University of North Carolina.

Julie Row is working on a master's in social work at USC from her home in New Jersey. Most days, she uses the mobile app on her Android phone once or twice to check in and keep up with classes.

That's about on par with how other students use the app, 2tor officials said. Nearly half of the social-work students at USC who downloaded the software use it 10 times per month for more than five minutes at a time; about a quarter of the education students have done the same.

"I'll go to the phone last-minute," Row said, "when it's useful to see whether the professor has posted information like class materials. If there's multimedia material [such as a PowerPoint presentation or video clip], then I prefer not to use my phone, because my battery tends to run out if I do." Instead, she views that kind of content on her laptop.

Paul Maiden, vice dean for USC's School of Social Work, said, "I do not think online will eliminate bricks and mortar." Instead, he said, he expects it to extend the school's reach.

– Matt Hamblen

SERVER CONSOLIDATION

AOL Unplugs 10,000 Servers, Saves $5 Million

AOL decommissioned nearly 10,000 servers and saved itself $5 million along the way to winning an Uptime Institute contest designed to show the high cost of running inefficient or underutilized IT equipment.

The contestants could move workloads to newer, virtualized equipment or into the cloud. Each had to provide documentation, such as work requests, recycling receipts and photographs, to verify what they had done.

AOL decommissioned 9,484 servers last year, or about a quarter of its servers worldwide, Uptime said. Its savings included $1.65 million in energy bills, $2.2 million in OS licenses and $62,000 in hardware maintenance costs.

The Internet services company also gained $1.2 million from scrap and resale, and reduced its carbon emissions by 20 tons, Uptime added.

The net savings came to about $5 million, said Brenda Rian, an AOL senior manager.

AOL bought new hardware to replace most of the decommissioned servers, so it cut its server count by only about 1,000, said Rian. But the new gear is virtualized and more energy-efficient, so AOL's utility bills are lower than they once were, she added.

Contest runner-up NBC Universal cut its server total by 284, or 17%.

– JAMES NICCOLAI,
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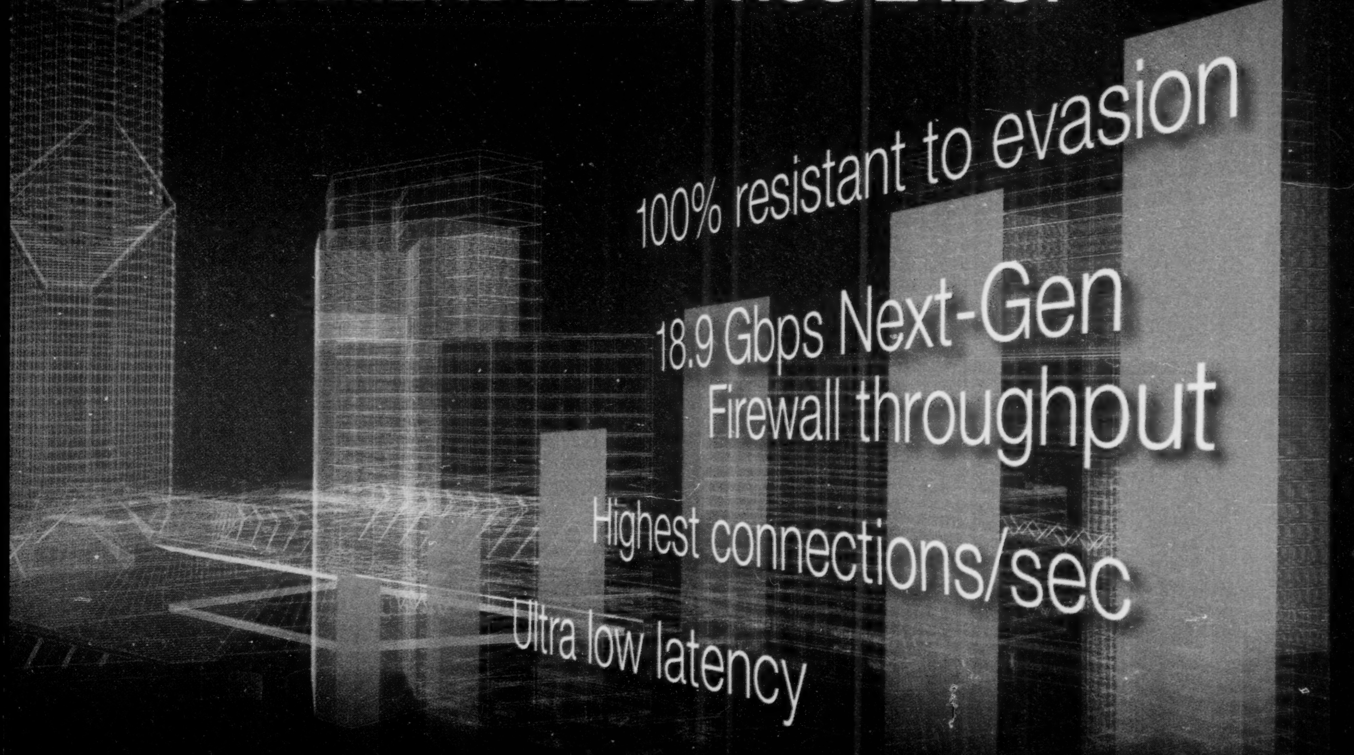
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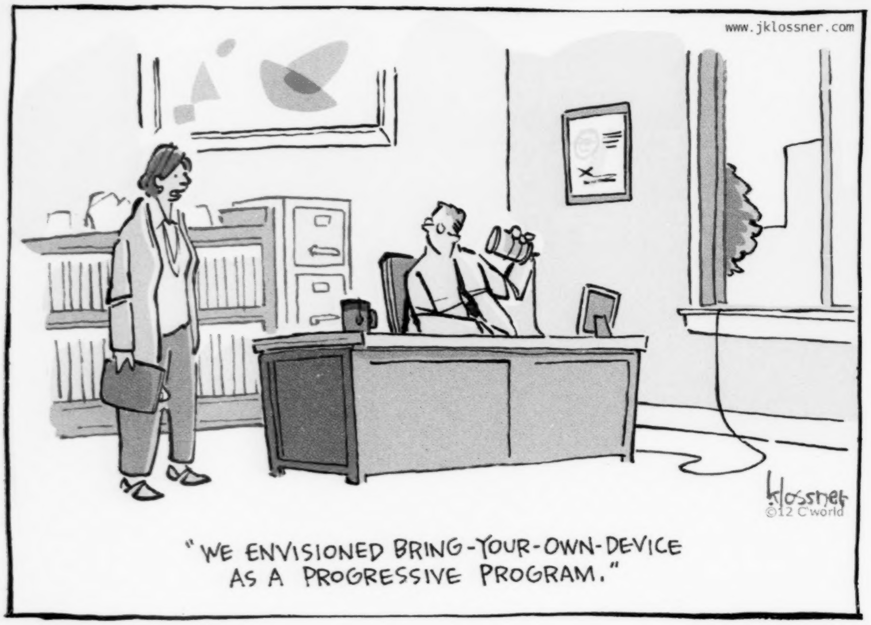
BETWEEN THE LINES

By John Klossner



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EMERGING TECHNOLOGY

New App Store Caters to Robot Fans

IF YOU want to waltz with your Roomba or remotely control your flying AR Drone, there's an online store that sells apps that let you do those things, and more. In fact, there are more than 300 apps available at the new site, RobotAppStore.com.

The e-marketplace — the brainchild of longtime robotics enthusiast, programmer and innovator Elad Inbar — is unabashedly modeled after other online app stores. With over 20 million domestic robots in use, Inbar said, there's a natural market for robot-related apps, just as there are markets for games and other apps.

Analyzing the way the app market has evolved, he pointed out that it was difficult to make money creating games for mobile phones 10 years ago, because developers had to rewrite each app for every phone. But using today's tools, it's possible to build apps that run on multiple devices.

Inbar said he expects the same type of progress in the robot apps world: A new class of tools not yet available will help developers build ever-more-complex and interesting apps for consumer-grade robots.

One up-and-coming area, he explained, is domestic navigation. Apps built for this purpose help robots learn how to get around your house and note where things are. For example, if you ask a robot to find your reading glasses, it will know which glasses belong to you (as opposed to other people who live in your household), where you left them, and how to retrieve them without running into the sofa or tripping over the dog.

At the moment, most of the apps available at RobotAppStore.com relate to entertainment, music and games; other categories include productivity and surveillance. Most of the apps are free, but some cost up to $10. Developers set the prices, and Inbar's company takes a 30% cut of whatever customers pay.

And now, if you'll excuse me, my NAO robot is reading my email.

– Johanna Ambrosio

Micro Burst

"Antiquated" software was blamed for Long Beach, Calif.'s failure to collect

$17.6 million

in parking fines over three years.

SOURCE: LONG BEACH CITY AUDITOR LAURA DOUD

SECURITY

Basic Defenses Absent at Most Breached Sites

Despite rising concerns that cyberattacks are growing more and more sophisticated, hackers used relatively simple methods for 97% of data breaches in 2011, according to a report compiled by Verizon.

The findings suggest that organizations are overlooking basic precautions even as they buy new security systems. Verizon also found that in 80% of attacks, hackers hit so-called victims of opportunity – poorly defended sites that happen to catch their eye – rather than targeting specific companies.

Based on investigations into over 850 data breaches, the report was compiled with help from the U.S. Secret Service and with input from law enforcement agencies in the U.K., the Netherlands, Ireland and Australia, according to Verizon.

For the first time, attacks by so-called "hacktivist" groups such as Anonymous breached more records – over 100 million – than did hackers looking specifically to steal financial or personal data.

Often, the breached companies lacked firewalls, had ports open to the Internet or used default or easy-to-guess passwords, said Marc Spitler, a Verizon security analyst.

All told, he said, "it is about going back to basic security principles."

– JAIKUMAR VIJAYAN

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IBM CIO Embraces BYOD Movement

The company supports the personal devices of 80,000 employees today, and aims to expand coverage to all 440,000 workers. By Chris Kanaracus

IBM CIO JEANETTE HORAN oversees a range of big IT projects, but one of the most pressing initiatives is the ongoing rollout of a BYOD, or bring-your-own-device, program.

The company's long-term goal is to provide the technology and support necessary to enable all 440,000 of its worldwide employees to use personal devices to do their jobs, Horan said in an interview at IBM's offices in Cambridge, Mass.

The IBM workforce has long been "hugely mobile," with employees working from client sites, home offices or other locations outside corporate buildings, she said. The mobile workforce had historically used company-owned Research In Motion BlackBerry devices managed under a long-running corporate mobile phone program.

Over the past year or so, though, Apple iPhones and other mobile devices began cropping up, and IBM decided to quickly get in front of the issue, Horan said.

> "If we didn't support them, we figured [the workers] would figure out how to support [the devices] themselves.
>
> JEANETTE HORAN, CIO, IBM

"If we didn't support them," she explains, "we figured [the workers] would figure out how to support [the devices] themselves." And that would be a no-no, because it could potentially put a wealth of sensitive corporate data at risk.

The BYOD program "really is about supporting employees in the way they want to work," Horan said. "They will find the most appropriate tool to get their job done. I want to make sure I can enable them to do that, but in a way that safeguards the integrity of our business."

To that end, IBM has issued a series of "secure computing guidelines" to raise awareness of online security and help employees understand the sensitive nature of corporate data, Horan said.

About 120,000 employees are using mobile devices to access IBM's network, and 80,000 of those people own the devices they use and pay the monthly service fees, according to an IBM spokesman. The remaining 40,000 use smartphones issued by IBM, he said.

Dion Hinchcliffe, executive vice president of strategy at Dachis Group, a consulting firm, said the prominence and scale of IBM's ongoing deployment, especially its approaches to management and policy, are worth paying attention to as the BYOD trend gathers steam and spreads to other major corporations.

The IBM BYOD program uses internal technology such as Lotus Traveler, which provides Lotus email and calendar functionality, and the Tivoli Endpoint Manager, which lets IT wipe devices when they are lost or stolen, or when an employee leaves the company.

IBM is also evaluating virtual private network technologies, which could provide greater security and support for more mobile applications.

To use their own devices, IBM employees must agree to adhere to Horan's policies, including the edict that personal devices must be wiped when employees leave the company.

Not all the mobile strategy challenges are technical, Horan said. For instance, the company's presence in 170 countries significantly complicates things. "Sadly, we have to have a contract in every country, pretty much," she noted.

That said, a broader move to mobile phones could lead to cost savings. "How do I make the mobile phone the only phone for the [employee] and then get rid of my office phones?" Horan said.

However, she added, such a full-blown global push toward mobile-only phone service for all employees depends on whether there's adequate cellular service in all locations. ◆

Kanaracus *is a reporter for the IDG News Service.*

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Employees Push IT To Social Networks

IT execs aim to comply with worker demands to use social networking tools on the job. By Sharon Gaudin

AS MORE AND MORE CORPORATE WORKERS use their favorite social networking tools for job-related tasks, IT executives are left with little choice but to quickly find ways to manage the consumer software.

The number of social network users is huge and still growing: Facebook claims some 850 million members around the world; Twitter is said to have 140 million-plus active users; and Google said in January that its Google+ social network had reached 90 million people less than a year after its launch.

Over the past year or so, corporate employees have increasingly used texting tools and Twitter microblogs to communicate with co-workers and business partners, and they've used Facebook and the Foursquare mobile social network to keep colleagues updated on their whereabouts during business travel.

"There's a [social] experience that our customers are having in their personal lives, and they're increasingly impatient to see it reflected in the way they work," said Peter Hirst, executive director of executive education at MIT's Sloan School of Management.

The school has launched a pilot collaboration program using the AvayaLive Engage platform from Avaya.

Other IT executives have also taken notice of the trend, and many are hard at work finding and implementing ways to control the technology and how it's used.

"It's pretty hard for us to control the evolution of technology," said David Nettles, director of IT architecture and compliance at Rayonier, a Jacksonville, Fla.-based forest products company.

"At first we say, let's control it all. We say, 'You can't post to Facebook while you're at work.' But they can. They just pull out their smartphone," he said. "To think you can stop them is a little naive."

Nettles said Rayonier is gradually implementing an enterprise social collaboration plan, laying the groundwork with Microsoft SharePoint software and Google Apps cloud-based services.

Observers note that any corporate social networking plan must include support for mobile devices along with desktop and laptop systems.

"Our job is to provide access to information and resources as quickly and painlessly as we possibly can," said Angela Yochem, chief technology officer at London-based pharmaceutical company AstraZeneca. "If that means providing communication access through mobile devices of any sort, or Google TV, or a desktop or laptop, we want to be able to provide that."

Yochem added that she's found that users tend to get frustrated if they can't use their social networks when and how they want to.

Dan Olds, an analyst at Gabriel Consulting Group, said the move toward enterprise use of social networking tools is simply another step in the corporate technology adoption process. "IT needs to respond by providing the tools that the business side needs to foster the collaboration they desire," he said.

Olds explained that prior to the widespread adoption of social networking tools — by new and veteran employees alike — IT managers had a difficult time coming up with strong corporate collaboration plans because "they didn't have any good examples to point at to show what they needed."

Today, Olds said, "the task is a bit easier because folks on the business side can now say they need a specific feature like one they use in Twitter or Facebook or Google+." ◆

> It's pretty hard for us to control the **evolution of technology.** – DAVID NETTLES, DIRECTOR OF IT ARCHITECTURE AND COMPLIANCE, RAYONIER

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THE Grill

Melissa P. Dodd

This IT leader leverages technology to support a weighty educational agenda.

Favorite subject in school: Psychology. I've always been fascinated by the mind and by behavior and relationships.

Favorite technology today: I'd be lost without my iPhone. I'm a little addicted.

Things you do in your spare time: What spare time? I've got a demanding job and a 2-year-old. I have very little spare time. But when we can, we travel.

Best piece of advice you've ever gotten: Sometimes you have to put your ego aside to get the job done. I carry that with me always.

Best piece of advice you've ever given: Be assertive when you need to be.

PHOTOGRAPHY BY ALEX GURN

MELISSA P. DODD *speaks passionately about children and the importance of their education. That's not surprising, considering Dodd has a master's degree in education from Harvard University. Dodd opted not to teach, however, and instead chose to support teachers and students through technology. She worked as an educational technology administrator at Tufts University before moving in 2003 to the Boston Public Schools, which serve some 56,000 students. There she started as a technology strategic planner before becoming deputy CIO in 2006 and then CIO in October 2010. Here she shares her ideas on running a large school system's IT department.*

What were the biggest challenges of your first year as CIO? I came into the position after the school year had started, so there were already a number of initiatives under way. I had to jump in and keep them going, so there was a huge learning curve. I had

Continued on page 12

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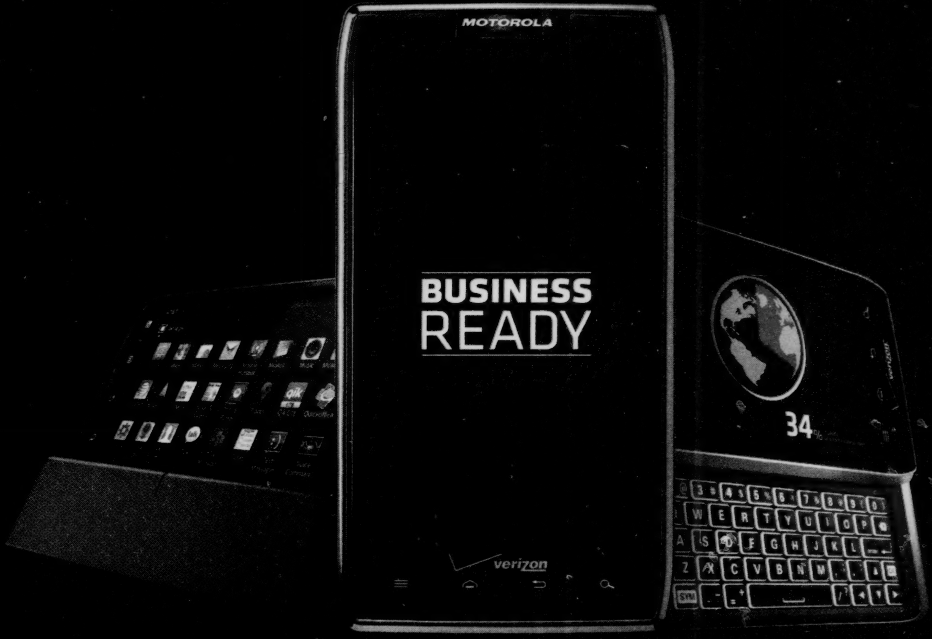

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Continued from page 10

been working within the technology department, but to address [the learning curve], I did a lot of listening and asking questions, and that helped me ramp up as quickly as possible.

What are your priorities for your second year as CIO? For the second year, it's really being a partner with our academic team to reach its goals and prepare our students for college or career success. Within that, it's focusing on strengthening our data system, making sure the systems are integrated and seamless for the user, so they can quickly get access to the data they need to support their job. It's making sure the right architecture is in place to support instructional improvement in the classroom through data. That's a key goal for the district.

The other key piece is around student access to technology. We have a five-year infrastructure upgrade plan, and we have a laptop initiative for our teachers, so that they have instructional technology tools to support student learning. The next phase is how to establish a similar foundation for our students and to make sure they have access to technology in all of our schools.

What's the most rewarding aspect of your job? One is my passion for education. I'm the child of two educators. My mother was a high school special education teacher; my father was an elementary science and math teacher. So I say it's in my blood. I get to help people solve problems every day, and for me that's very rewarding. I see myself as a bridge, translating technology into education, translating how it can be an enabler to what we want to accomplish educationally.

What are the unique challenges of IT in this industry? I think one is that there's civic responsibility. Families entrust us with their children and entrust us with helping to prepare their children for success. It's high stakes and a huge responsibility, and it requires constant commitment and dedication. If you talk about bottom line, our bottom line is children's futures, and I don't think there's any comparison to that in my mind. I do have a future Boston Public Schools student, so [I think]: What do I want for my child and how do I make that available for everybody's children?

What do you think CIOs in other industries can learn from IT leaders who work in the educational arena? The first thing that comes to mind is how to do more with less. Schools have always had to do this, but now it's even more pronounced. And given the cost of technology, how can we be innovative and creative with limited resources? I would use our teacher laptop initiative as an example. We refreshed our laptops a year early, so we sold our laptops to bring in revenue, but we had to do this very quickly. We had to get them into the teachers' hands for summer — so it's "all hands on deck." We break down silos, and from green light to implementing, it was about a four-month process. We refreshed 5,000 laptops.

School funding is notoriously unpredictable, particularly in poor economic climates like the one we're experiencing. How do you develop strategic plans when funding is such a wild card? Part of it is having a clear set of priorities that can be easily articulated and being focused with those priorities. We've made significant investments in technology, but having that clear set of priorities and keeping it on everyone's front burner while budgetary decisions are being made helps when budgets and financial resources are tight. It helps to move the agenda forward, because it's not a separate technology agenda — technology is a way to support our educational agenda.

Schools also have many more stakeholders and constituents, as well as a more diverse group of users, than most other organizations. How do you manage those different stakeholders? One [way] is communication. I leverage technology to do that. I tweet; I blog; we have a website to let people know what we're doing. The other thing is having a collaborative approach and being a consensus builder. Taking all those diverse needs and translating them into something actionable that represents all those different voices. It's working with our administrators, teachers, students, families, communities, our school committee members and other city agencies, and being a partner with them and providing them with opportunities to engage in the work we're doing.

– Interview by Computerworld *contributing writer*
Mary K. Pratt *(marykpratt@verizon.net)*

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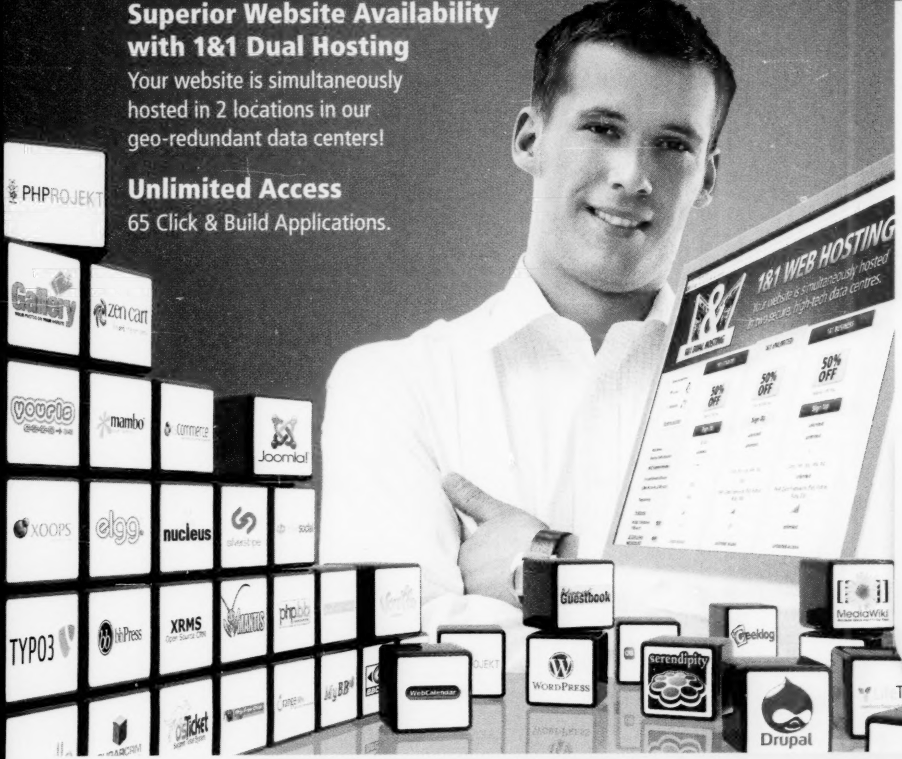
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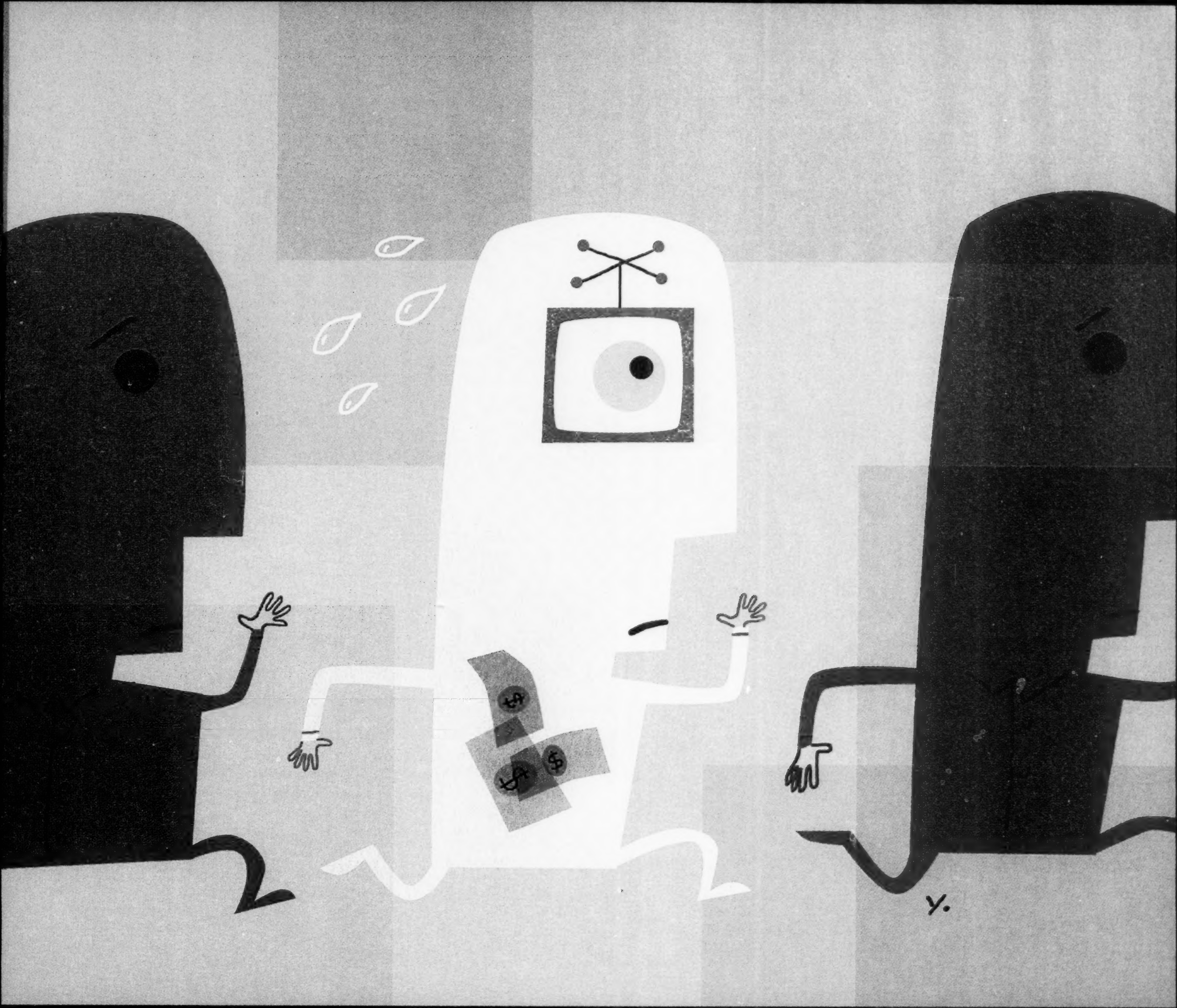


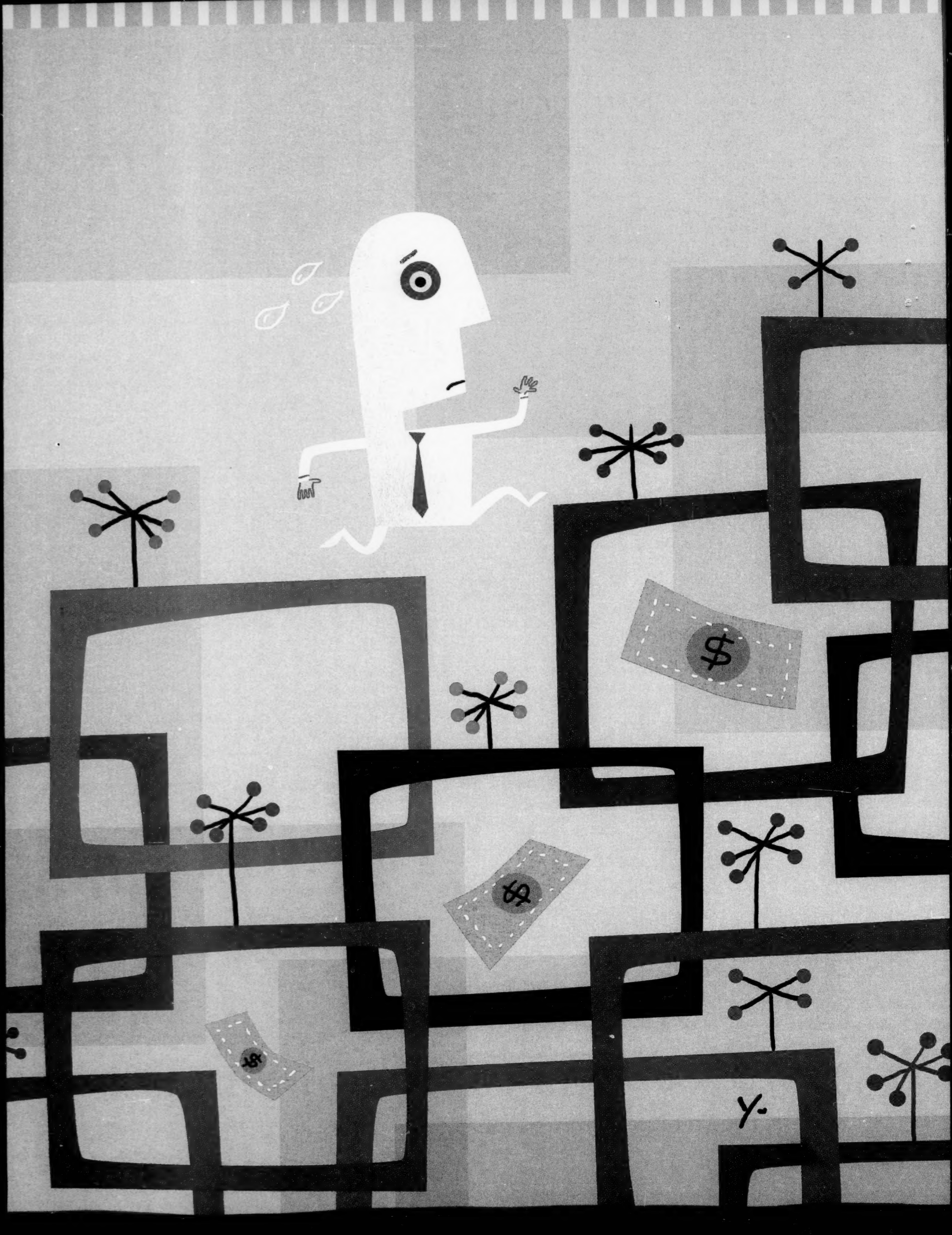
26TH ANNUAL | SALARY SURVEY

As the IT industry **picks up the pace,** *salaries are rising but workloads are* **growing faster still,** *leaving employees* **hustling to keep up.** *Our survey of more than 4,000 IT professionals shows why the pressure is on.*

ONLINE: Check out our online interactive tool to see compensation data for more than 50 IT titles. **computerworld.com/12/salaries**

21 IT Pay by the Numbers | **26 Stressing Over Skills** | **28 Benefits Go Bust**

JAMES YANG ILLUSTRATION



Salaries are up, but pressure is too, *as employees hustle to keep current.*

BY MARY BRANDEL

IT PICKS UP the PACE

[redacted]

THERE'S GOOD NEWS AND BAD NEWS on the salary front for IT professionals this year. With many businesses enjoying renewed growth following an extended period of economic gloom, IT workers saw another year of modest salary increases, and they reported significantly fewer pay cuts, hiring freezes and layoffs. That's the good news.

The bad news is that tech professionals are working hard for every penny they bring home — so hard that in many cases the extra workload outweighs the small boost in pay.

For the second year in a row, salaries and total compensation for IT professionals have inched up. According to *Computerworld's* 2012 Salary Survey, average salaries increased 2.1% this year, and average total compensation rose by 1.8%. In all, 56% of the 4,337 respondents to our survey reported an increase in their base salary this year, while only 9% reported a decrease.

Hiring is also up, with 87% of hiring managers who responded to the survey saying that they expect IT staff head count to increase in the next 12 months or remain the same. Only 25% of the total respondents reported hiring freezes, compared with 39% last year.

JAMES YANG ILLUSTRATION

And other negative indicators, such as salary freezes, budget cuts and layoffs, are all in retreat (see charts at right).

IT, it seems, is finally on the road to recovery. Workers even seem to feel better about the economy: Only 19% listed it as a challenge in the latest survey, compared to 28% the prior year.

Running in Place

However, a closer look reveals IT professionals struggling to accept the fact that they might never regain the salary ground lost during the downturn and grappling with heavy workloads, added responsibilities and demands to learn new skills.

Mark Labby, for one, said he's happy to report a 2% pay increase after years of a salary freeze and a decision by his employer, the Pennsylvania Higher Education Assistance Agency, to stop paying for on-call time, which resulted in a 5% reduction in his compensation. The PHEAA is now anticipating "astronomical" growth, says the senior database administrator, and it has even posted new job openings.

Though Labby says he feels fairly compensated, he can't help noting the gap between the recent pay boost and the earlier cut, particularly since the modest raise is more than offset by the rising cost of health benefits.

Survey respondents echo Labby's concerns: Only 20% said that they believe their salary is keeping pace with business growth and demands, and 71% said that they have either stayed flat or lost ground financially in the past two years.

"Technology professionals are being asked to do more for less," says Tom Silver, senior vice president for North America at job search site Dice.com. While demand for IT workers is high — with an unemployment rate of just 3.8% in this sector compared with the national average of 8.3%, according to the Bureau of Labor Statistics — continued economic uncertainty is keeping the brakes on salaries. "Employers have begrudgingly increased salaries, but tech pros want more," Silver says.

Some IT workers worry that they will be left behind compensation-wise and skills-wise — and even energy-wise, as they tackle what appears to be a permanently increased workload.

"My to-do list keeps getting longer, though I'm working extended hours to try to catch up," says "Steve," the director of technology at a small manufacturer in the South. As on-hold projects are approved, he fears that "one day someone will look at all I have to do and think I'm not getting enough

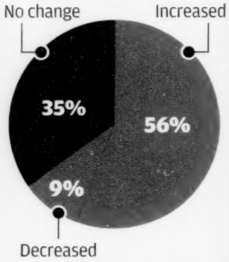
Continued on page 20

SALARIES BUMP UP

Salaries **rose an average of 2.1%** *in the past year.*

Senior managers (BASE: 739)	**2.3%**
Middle managers (BASE: 1,143)	**2.1%**
IT staffers (BASE: 2,455)	**2.0%**

How has your base salary changed from one year ago?
(BASE: 4,337 RESPONDENTS)



Average increase: 6%
Average decrease: 8%

THE RECESSION'S EFFECTS LINGER

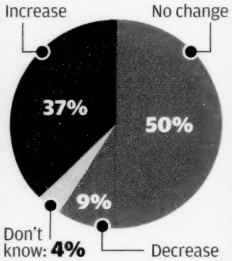
In the past 12 months, have you had...

Benefits cut	**26%**
Pay frozen	**26%**
Less training	**27%**

(BASE: 4,337 RESPONDENTS)

WHO'S HIRING?

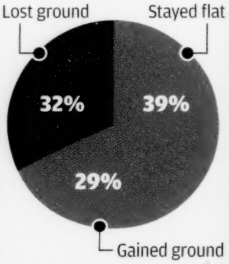
In the next 12 months, do you expect your company's IT staff head count to...



(BASE: 1,880 IT MANAGERS)

FAILURE TO THRIVE

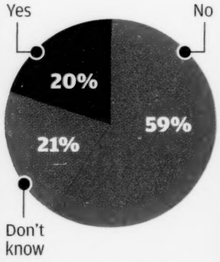
Over the past two years of your career, do you feel you have financially ...



(BASE: 4,337 RESPONDENTS)

FALLING BEHIND

Do you feel that your salary is keeping pace with business growth and demands?



(BASE: 4,337 RESPONDENTS)

HOW WE CONDUCTED THE SURVEY

Computerworld's 26th annual Salary Survey was administered via the Internet.

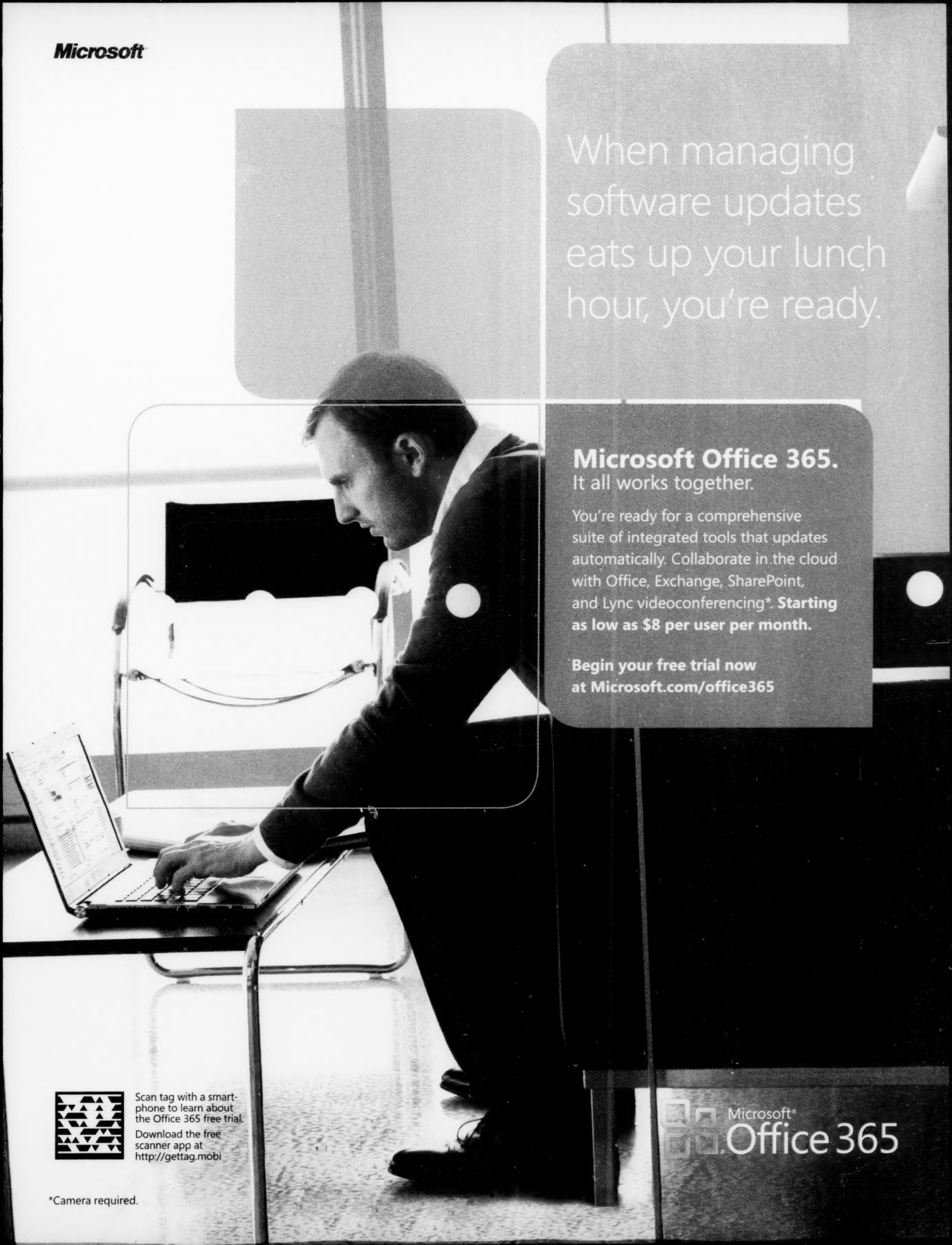
The survey results included responses from both *Computerworld* print subscribers and visitors to *Computerworld.com*.

The collection of data began on Oct. 5, 2011, and concluded on Dec. 16. A total of 4,825 people responded to the survey. Of those respondents, 4,337 were employed full time or part time and were eligible to complete the entire survey. At the 95% confidence level, the margin of error for this sample size is 1.5 percentage points.

Compensation figures for 2011 were calculated based on the percentage change reported by the respondents.

MORE ONLINE: For a detailed look at the survey methodology, visit **computerworld.com/12/salaries.**

Microsoft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> **Technology professionals are being asked to do more with less; there's no doubt about that.**
>
> TOM SILVER, SENIOR VICE PRESIDENT, DICE.COM

NEGATIVES IN RETREAT

Smaller percentages of respondents reported that they had experienced budget cuts or other negative moves by their employers:

	2011	2012		2011	2012
Budget cuts	55%	38%	Training cuts	30%	21%
Salary freeze	45%	26%	Cancelled projects	25%	16%
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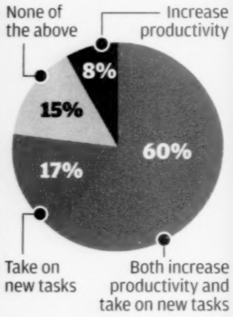
Permanent staff layoffs	36%	25%	Salary cuts	13%	6%

BASE: 4,287 RESPONDENTS; MULTIPLE RESPONSES ALLOWED

PRODUCTIVITY DEMANDS ARE UP

Within the past year, have you felt more pressure to increase productivity or take on new tasks?



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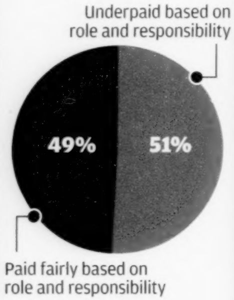
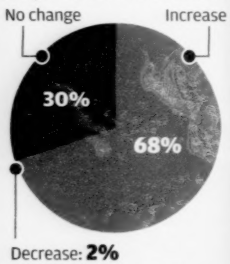


BASE: 4,337 RESPONDENTS

WORKLOADS ON THE RISE

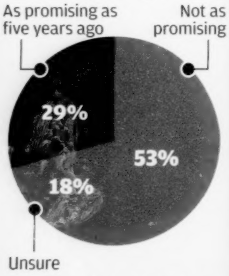
How do you expect your workload and responsibility to change over the next 12 months?



BASE: 4,332 RESPONDENTS

CLOUDY FORECAST

Do you believe that a career in IT and the profession's earning potential are as promising today as they were five years ago?



BASE: : 4,337 RESPONDENTS

Continued from page 18

done." Despite corporate growth, his salary remains flat. "But I've yet to find another company that will pay me more — and yes, I've been looking," he admits.

"Robert," a senior analyst at a big insurance company in central Illinois, also feels behind the eight ball. After two years of a hiring freeze, workers' responsibilities have grown much more than their salaries, he reports. Now, as Robert and his colleagues are being asked to shoulder new duties to support the company's growth initiatives, new hires are being offered better compensation than veteran workers. "I'm making good money, but the five- and 10-year employees are making about the same as the 20- and 25-year employees," he says. Meanwhile, the pressure seems to mount. "Soon, analysts will need to be available seven-by-twenty-four," he says.

Just over half (51%) of our survey respondents said they had been given an increased workload in the past 12 months, and 68% said that they anticipated additional workloads and responsibilities in the next 12 months. Meanwhile, 85% said that they have felt more pressure over the past year to increase productivity or take on new tasks, and of that group, 90% said their salary had not been adjusted to reflect the added work. No wonder 51% of the respondents reported feeling underpaid based on their role and responsibility.

Working Hard for the Money

But even a pay increase doesn't always relieve the pressure. Just ask "Raul," a systems engineer. Last year, his employer, a U.S. telecom giant, offered him a choice of a demotion or a layoff after 12 years of service. He was fortunate, because he had two job offers from other companies. He accepted one of them, and now he's earning a higher salary at a small but fast-growing wireless communications company.

But the bar has been raised: Raul now needs to learn new skills, and he has switched from an internal support role to a customer-facing one. "That switch alone was like going from no pressure to constant high pressure accompanied by random periods of super-high pressure," he says. "The company was willing to take a chance on a young engineer, and for that, I will be forever grateful. I have been working feverishly to increase my productivity and learn many new technologies."

Looking Ahead

Clearly, pay is only one piece of the puzzle when it comes to IT professionals' overall job satisfaction. While 66% of respondents said they're satisfied or very satisfied with their total compensation, only 29% said they believe that a career in IT and the profession's earning potential are as promising today as they were five years ago.

"For the most part, technology professionals feel pretty good about their career prospects, if they have the skills that employers are looking for," Silver says.

That said, "I don't think it ever will be like it was before the recession," says Robert, the insurance company senior analyst. "We now have a global market for IT services, and that's causing our salaries to stabilize." ◆

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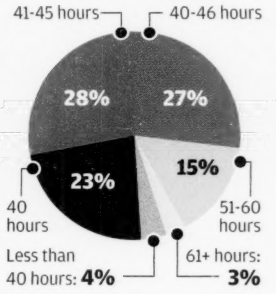
LONG HOURS

How many hours per week do you work on average?



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TOP 10 PRIORITIES

What matters most to you about your job?

Base pay	**73%**
Benefits	**59%**
Vacation time/ paid time off	**40%**
Job stability	**38%**
Flexible work schedule/ telecommuting	**34%**
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Opinions and knowledge are valued	**19%**

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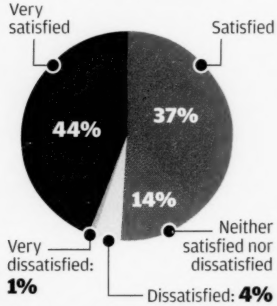

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Senior Management Positions

JOB TITLE	AVERAGE SALARY	AVERAGE BONUS	2012 TOTAL	2011 TOTAL	% CHANGE TOTAL COMP
CIO/vice president of IT	$152,473	$28,446	$180,919	$177,940	1.7%
Chief technology officer	$136,314	$24,477	$160,791	$161,897	-0.7%
Director of IT	$111,353	$12,680	$124,033	$121,509	2.1%
Director of systems development	$141,297	$24,312	$165,609	$162,710	1.8%
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Middle Management Positions

JOB TITLE	AVERAGE SALARY	AVERAGE BONUS	2012 TOTAL	2011 TOTAL	% CHANGE TOTAL COMP
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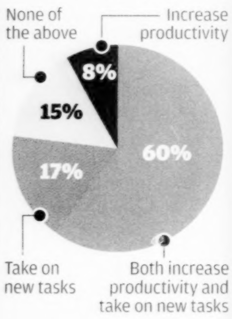

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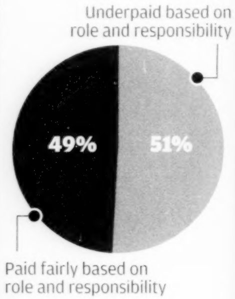

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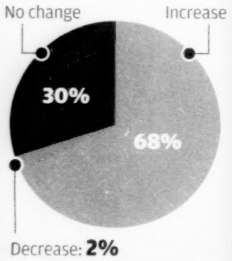

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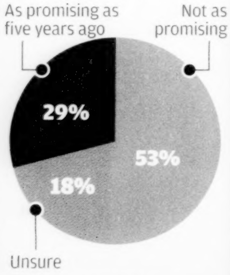

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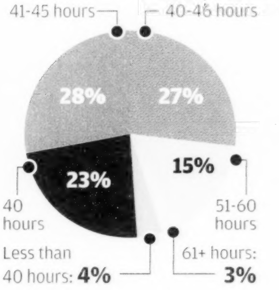

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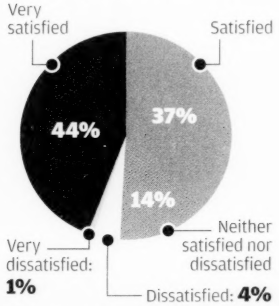

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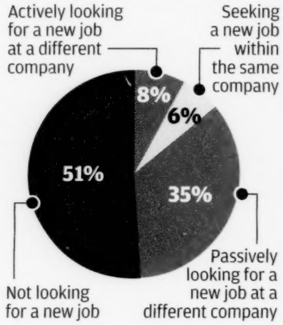
Database analyst	$76,821	$6,221	$83,042	$82,239	1.0%
Database architect/ developer	$101,019	$8,611	$109,630	$108,289	1.2%
Enterprise architect	$106,061	$10,670	$116,731	$115,812	0.8%
Help desk/tech support specialist	$53,362	$2,260	$55,622	$55,014	1.1%
Information security specialist	$84,949	$5,647	$90,596	$89,309	1.4%
Network administrator	$61,728	$1,683	$63,411	$62,526	1.4%
Network engineer/ wireless network engineer	$84,269	$3,867	$88,136	$85,400	3.2%
Network architect	$96,414	$12,341	$108,755	$105,139	3.4%
Network engineer	$84,870	$3,551	$88,421	$85,757	3.1%
Programmer/ analyst	$77,284	$2,421	$79,705	$78,285	1.8%
Project leader	$90,035	$6,526	$96,561	$94,864	1.8%
Quality assurance specialist	$79,537	$3,247	$82,784	$81,551	1.5%
Software developer	$85,080	$5,265	$90,345	$88,619	1.9%
Software engineer	$97,907	$7,284	$105,191	$101,724	3.4%
Systems analyst	$75,583	$4,106	$79,689	$78,452	1.6%
Senior systems analyst	$92,908	$5,762	$98,670	$97,193	1.5%
Storage administrator/ architect	$94,036	$5,974	$100,010	$96,255	3.9%
Systems administrator	$73,279	$2,337	$75,616	$73,619	2.7%
Systems architect	$100,769	$8,238	$109,007	$106,063	2.8%
Systems programmer	$96,656	$8,894	$105,550	$104,163	1.3%
Technical trainer	$62,173	$5,075	$67,248	$68,372	-1.6%
Technician	$51,208	$1,514	$52,722	$52,460	0.5%
Technology/business systems analyst	$78,278	$6,098	$84,376	$83,232	1.4%
Web developer	$74,464	$2,524	$76,988	$74,548	3.3%

SITTING TIGHT

Which one of the following best describes your job-search status?



BASE: 4,337 RESPONDENTS

MOTIVATED BY MONEY

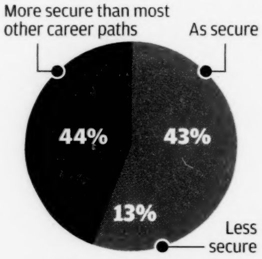
What would you look for in a new job?

Higher compensation	57%
More interesting/ challenging work	43%
More personal fulfillment	43%
Career opportunities	42%
More job stability	24%
Less stress	23%
A better personal/ family situation	22%
More responsibility	21%
A more stable company	21%
Security from layoffs	17%
A different kind of company	17%

BASE: 2,137 RESPONDENTS; MULTIPLE RESPONSES ALLOWED

SECURE CAREER PATH?

Given the current economy, how secure do you believe a career path in IT is?



BASE: 4,331 RESPONDENTS

A Sampling of Average Total Compensation by Region

JOB TITLE	New England	Middle Atlantic	South Atlantic	North Central	South Central	Mountain	Pacific
CIO/vice president of IT	$199,214	$203,993	$176,866	$191,334	$155,160	$137,203	$172,930
Director of IT	$147,538	$142,560	$123,970	$101,391	$123,019	$129,992	$133,605
IT manager	$96,039	$97,183	$98,258	$91,208	$89,667	$94,832	$100,376
Project manager	$106,457	$118,219	$117,025	$103,931	$111,486	$116,667	$115,267
Systems administrator	$84,944	$73,076	$80,329	$75,777	$72,754	$69,270	$84,621
Help desk/tech support specialist	$50,798	$61,297	$56,138	$45,916	$56,856	$47,934	$70,039
Network administrator	$67,750	$64,260	$62,452	$63,664	$62,696	$63,326	$64,184
Systems analyst	$102,249	$86,794	$77,677	$75,677	$87,552	$80,168	$79,464
Programmer/analyst	$81,473	$86,517	$84,434	$71,782	$81,832	$81,013	$88,728
Technology/business systems analyst	$83,250	$111,450	$97,554	$80,034	$68,624	$85,943	$82,680
Software engineer	$119,249	$106,594	$107,001	$98,949	$109,632	$104,925	$130,305
Network engineer	$89,800	$88,679	$86,200	$90,129	$81,932	$88,659	$105,165

ORANGE TEXT: The total base for this job title in this particular region was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

GRAY TEXT: The total base for this job title in this particular region was fewer than 16 responses. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

REGIONS

New England: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont

Middle Atlantic: New Jersey, New York, Pennsylvania

South Atlantic: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, Puerto Rico, South Carolina, U.S. Virgin Islands, Virginia, West Virginia

North Central: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

South Central: Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, Texas

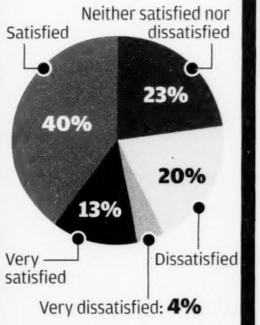
Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

Pacific: Alaska, California, Hawaii, Oregon, Washington

Satisfaction Meter

MONEY

How satisfied are you with your total compensation package?



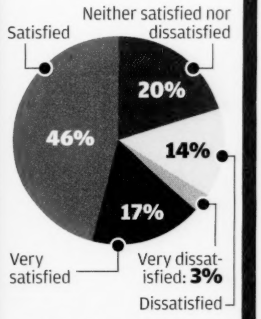
BASE: 4,330 RESPONDENTS

Compared with 12 months ago:	
More satisfied	17%
Less satisfied	19%
The same	64%

BASE: 4,337 RESPONDENTS

CURRENT JOB

How satisfied are you with your current job?



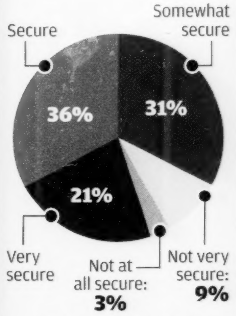
BASE: 4,331 RESPONDENTS

Compared with 12 months ago:	
More satisfied	20%
Less satisfied	17%
The same	60%
Not in the same position	3%

BASE: 4,337 RESPONDENTS

SECURITY

How secure do you feel your job is?



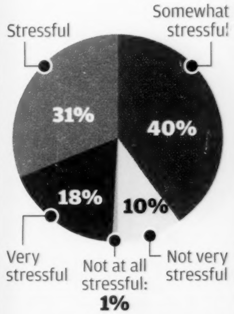
BASE: 4,331 RESPONDENTS

Compared with 12 months ago:	
More secure	22%
Less secure	16%
The same	59%
Not in the same position	3%

BASE: 4,337 RESPONDENTS

STRESS

How stressful is your job?



BASE: 4,328 RESPONDENTS

Compared with 12 months ago:	
More stressful	18%
Less stressful	19%
The same	60%
Not in the same position	3%

BASE: 4,337 RESPONDENTS

A Sampling of Average Total Compensation by Industry

CIO/vice president of IT

Health/medical services	$196,540
Computer services/consulting	$164,165
Education	$132,561
Banking	$142,488
Legal/insurance/real estate	$194,515
Government	$106,287
Manufacturing (noncomputer)	$184,067

Director of IT

Education	$84,105
Manufacturing (noncomputer)	$126,629
Health/medical services	$124,232
Government	$111,448
Entertainment/marketing/advertising	$124,893
Legal/insurance/real estate	$158,016
Finance/accounting	$152,944
Nonprofit	$103,206

IT manager

Manufacturing (noncomputer)	$92,467
Education	$81,908
Health/medical services	$94,100
Government	$91,855
Computer services/consulting	$102,771
Legal/insurance/real estate	$98,677
Nonprofit	$78,442
Business services/consulting (noncomputer)	$103,919

Project manager

Computer services/consulting	$120,248
Government	$102,147
Health/medical services	$99,529
Telecommunications	$117,352
Manufacturing (noncomputer)	$107,627
Legal/insurance/real estate	$100,630
Finance/accounting	$103,588
Energy/utilities	$115,943

Help desk/tech support specialist

Education	$42,836
Computer services/consulting	$58,811
Health/medical services	$54,701
Government	$59,193
Manufacturing (noncomputer)	$48,619
Legal/insurance/real estate	$56,637
Finance/accounting	$58,745
Banking	$51,295

Technology/business systems analyst

Computer services/consulting	$77,136
Government	$72,623
Health/medical services	$83,792
Legal/insurance/real estate	$94,881
Manufacturing (noncomputer)	$84,809
Finance/accounting	$108,213
Telecommunications	$83,719
Banking	$111,100

Network administrator

Education	$58,799
Manufacturing (noncomputer)	$66,002
Health/medical services	$64,636
Government	$71,025
Computer services/consulting	$65,815
Banking	$62,786
Legal/insurance/real estate	$73,286
Mining/construction/engineering	$64,920

Network engineer

Computer services/consulting	$81,775
Government	$88,162
Health/medical services	$74,158
Telecommunications	$107,103
Education	$76,972
Manufacturing (noncomputer)	$71,650
Legal/insurance/real estate	$99,714
Banking	$97,380

Programmer/analyst

Government	$74,678
Computer services/consulting	$71,808
Legal/insurance/real estate	$80,524
Manufacturing (noncomputer)	$64,855
Education	$68,234
Health/medical services	$81,219
Transportation/logistics	$89,274
Retail trade	$79,528

Software engineer

Computer services/consulting	$103,643
Manufacturing (computer)	$110,504
Defense/aerospace	$110,363
Manufacturing (noncomputer)	$100,611
Legal/insurance/real estate	$108,560
Banking	$97,290
Health/medical services	$86,883
Telecommunications	$113,076

Systems administrator

Manufacturing (noncomputer)	$77,978
Education	$58,413
Computer services/consulting	$74,383
Legal/insurance/real estate	$81,011
Health/medical services	$77,473
Government	$82,615
Telecommunications	$85,919
Banking	$77,850

Systems analyst

Health/medical services	$73,525
Government	$78,881
Legal/insurance/real estate	$90,844
Manufacturing (noncomputer)	$81,987
Computer services/consulting	$87,612
Education	$62,625
Energy/utilities	$84,433
Banking	$63,860

ORANGE TEXT: The total base for this job title in this particular industry was fewer than 30 responses but more than 15. These figures should be used for comparison only, because they don't constitute a statistically significant sampling.

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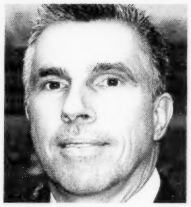


OPINION

JACK CULLEN

Stop Searching for That Elusive Purple Squirrel

THE RIGHT TECH TALENT is critical to a company's efficiency, innovation and financial success, and demand for qualified talent has never been greater. As the pressure mounts, the search for the perfect candidate is getting increasingly competitive.

> Managers are looking for candidates with skills that aren't available or don't even exist.

IT hiring managers around the country are looking for candidates with skills that often aren't available, or that sometimes don't even exist.

At Modis, we've come to call this search for perfection the quest for the "purple squirrel." IT hiring managers can't find the purple squirrel — the ideal job candidate — because the skills IT professionals need are continually evolving. Expertise that once was considered "nice to have" is now a "must-have," and hiring managers refuse to compromise. Companies seeking someone with seven years of experience with Java and Ruby on Rails won't consider a candidate who has nine years of experience with Java and is eager to learn Ruby on Rails. Instead, they keep looking for that elusive purple squirrel.

What's more, they're not just looking for technical skills. We often hear requests for IT candidates who are "strong communicators." Companies want IT people who are solution-oriented and can assess and solve problems with the bottom line in mind. Highly skilled programmers can be turned down if a hiring manager doesn't think they'll be able to interact with business people.

Recent surveys suggest that IT professionals are aware of this growing skills gap. In *Computerworld*'s 2012 Salary Survey, 93% of the IT professionals surveyed said that they have career concerns, the biggest of which include keeping their skills up to date (cited by 26% of the respondents), followed by finding an appropriate new position for their skill set (15%). Similarly, in a recent Modis survey of IT professionals, 61% of the respondents said training in new technical skills was a key contributor to their job satisfaction. It's clear that IT professionals understand new industry demands and are eager to learn the skills that will advance their careers.

The perfect candidate probably isn't available or doesn't exist, but you can ensure that you find the best available talent if you remember these tips:

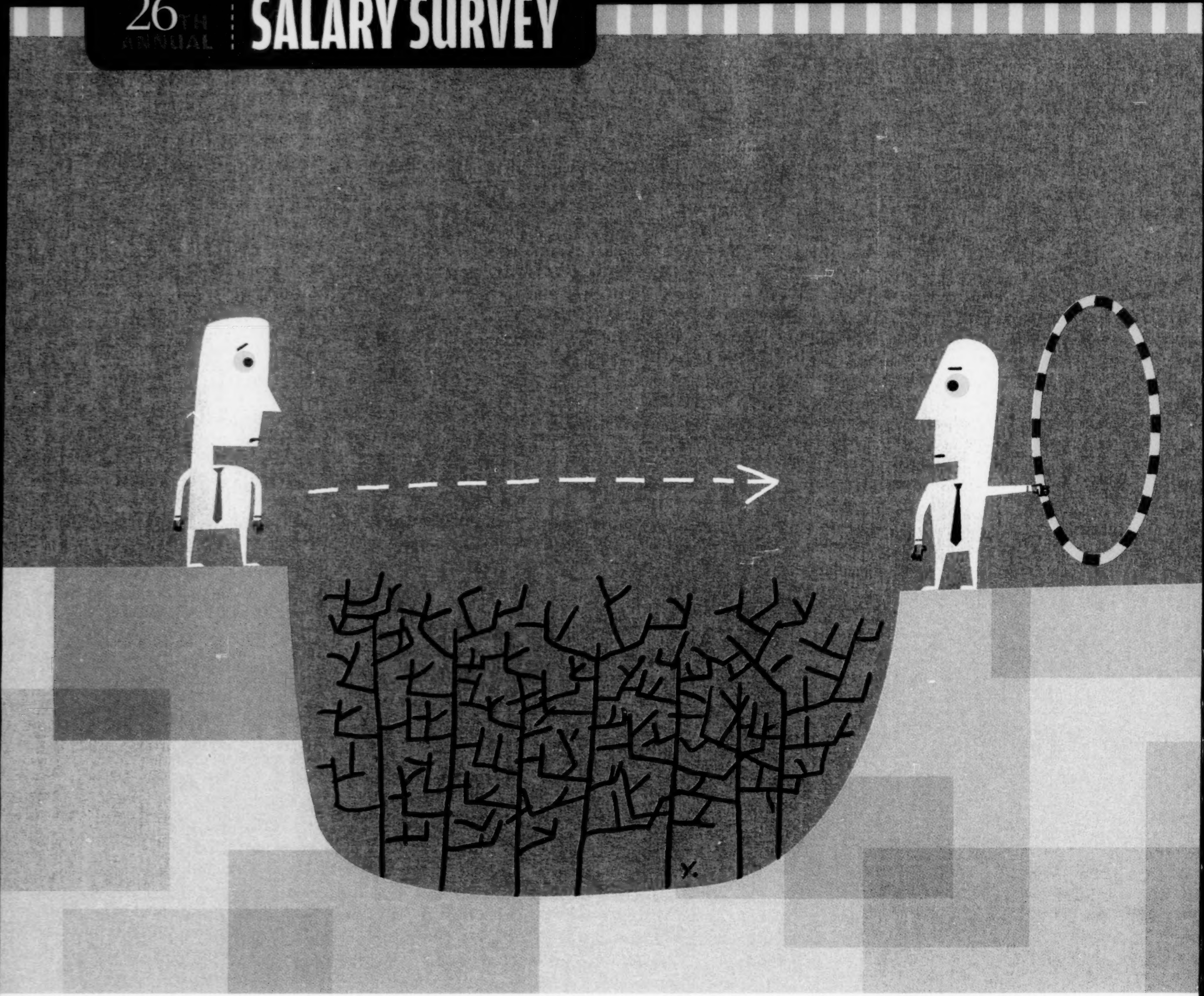
Be open-minded. Don't be afraid to hire someone who doesn't possess all the skills you consider to be must-haves. Look for someone who shows promise and could thrive with the right training.

Train to retain. Holding on to star employees is just as important as attracting new talent — even if that means retaining people whose skills aren't fully developed. As the economy continues to improve, many employees might consider switching jobs if they're presented with the right opportunity (especially if it gives them a chance to learn new skills). Entice them to stay by offering training in areas that are new to them. Employees tend to be loyal to companies that invest in them.

Consider talent from different industries. Sometimes the right candidate won't come from an obvious IT sector. For example, we've seen healthcare CIOs look to the financial services world to find people to work on new electronic health records systems, because financial IT professionals have the right mix of skills for the job.

Given the changing nature of IT, the skills that ideal job candidates need will always be evolving. What shouldn't change is a flexible approach to finding the right talent. ◆

Jack Cullen, president of Modis, a global provider of IT staffing services, has been in the IT resource management business for more than 25 years. Learn more about Modis at *www.modis.com*.



STRESSING OVER Skills

Hiring managers are looking for perfection. *After years of training cuts, IT workers are worried.* **BY MARY K. PRATT**

[redacted]

DEAN HADDOCK HAS SEEN how highly skilled IT workers can be sidelined: He has witnessed more than one colleague develop deep skills in an IT specialty, only to be displaced — in a flash — when a new technology comes along.

In light of that cold reality, Haddock knows he has to keep current with not just basic IT skills — the fundamentals related to networking, databases and systems integration — but with a never-ending list of up-and-coming technologies like cloud computing and social networking. On top of that, Haddock says he must understand the strategy that drives his industry and his company.

JAMES YANG ILLUSTRATION

"There's a whole community of CIOs and leaders in tech positions coming together to talk and collaborate on how to get out of this corner we painted ourselves into. We don't want to be just the people who others call when the printers don't work," says Haddock, who is manager of IT at StoryCorps, a Brooklyn-based nonprofit that records and archives conversations between everyday Americans telling stories about their lives.

Haddock's comments capture the sentiment of many of his fellow IT professionals. Despite the improving economy, 93% of the 4,337 respondents to *Computerworld*'s 2012 Salary Survey said they have concerns about their careers.

Some 26% of those respondents said that they're concerned specifically about keeping their skills up to date and about being valuable to their employers, while 15% listed finding an appropriate new position for their skill set as their primary concern. Clearly, skills are front and center in IT workers' minds as the economic recovery gains steam.

MANAGERS HIRING FOR NEW SKILLS...

New technologies are of interest to the 37% of managers who expect to increase head count in the next 12 months. They said they plan to hire people with skills in these areas:

	2011	2012	CHANGE
Mobile/wireless/ communications	11%	18%	7%
Cloud	17%	22%	5%
Security	26%	31%	5%
Web security	10%	15%	5%
Application development	53%	49%	-4%

BASE: 1,880 RESPONDENTS WITH MANAGERIAL TITLES

...LEAVE WORKERS WORRYING

Here are the top three concerns workers have about their careers for 2012:

Keeping skills up to date/ being valuable to employer	26%
Finding an appropriate new position for their skill set	15%
Increased workload	13%

BASE: 4,337 RESPONDENTS

Caught in a Bind

Observers say tech workers are reeling from a particularly potent one-two punch brought on by the sustained economic crisis: Organizations of all stripes have reported deep cuts to their training budgets in recent years, and they have held off on initiatives that would have given workers a way to learn new technologies.

At the same time, technological evolution continued at its breakneck pace. Our 2012 Salary Survey found that the skills related to emerging technologies, such as mobile, wireless and communications systems, cloud computing and Web security, enjoyed the biggest year-over-year increases in demand among IT managers who plan to hire in the next 12 months (see chart at right).

On top of that, hiring managers say they want people with the basic tech skills that have always been required, as well as business acumen, communication skills and customer service abilities.

As a regional systems engineering manager at Avaya, a Lisle, Ill.-based provider of collaboration and communication products, Joseph Steiner manages a group of presales system engineers, so he understands the current dynamic from both a manager's perspective and a tech worker's point of view.

"It's not just keeping up with the pace of change. [IT workers] have to be 'broader' to remain relevant," he says. "There's more breadth required of IT personnel than ever before."

All this helps explain why so many IT professionals are worried about keeping their skills up to date. "Given the rapid speed at which innovation is occurring, you can't talk to any person in technology and not pick up some sort of drive or passion to take on or learn new technology," Haddock says.

At the same time, "there is a caution in the field to be very thoughtful about what technologies we're pouring our energies into. It's possible to pigeonhole yourself to one technology that could become obsolete in the future," Haddock warns.

Brian Gegan says people need to take the initiative to keep up, especially if they've become comfortable in a particular role. "It's a real problem, because the skill sets that work today aren't necessarily going to be applicable tomorrow," says Gegan, who is senior vice president for technology at Eyefinity, a Rancho Cordova, Calif.-based provider of online business tools for eye care professionals. Some IT workers understand that and seek out new initiatives and training opportunities, he says. But others need coaching or mentoring to ease them out of their comfort zones.

Gegan says Eyefinity continued to offer company-sponsored training throughout the recession, and he requires staffers to have professional development plans. Elsewhere, the trend of organizations cutting training budgets during the recession seems to be finally slowing. Last year, 30% of Salary Survey respondents reported cuts to training, while only 21% did this year.

DIY Skills Development

Haddock says he and his colleagues keep skills anxiety at bay by engaging in the long-standing IT tradition of learning by experimenting with technologies. "We all do our own projects outside of work," he says. "It's not a 9-to-5 thing for us. It's a lifestyle."

Steiner says he sees a similar approach among his colleagues, who try out new tech toys in Avaya's demo lab. "They'll go play with it until they break it and then fix it. There's still a lot of that experiential learning," he says.

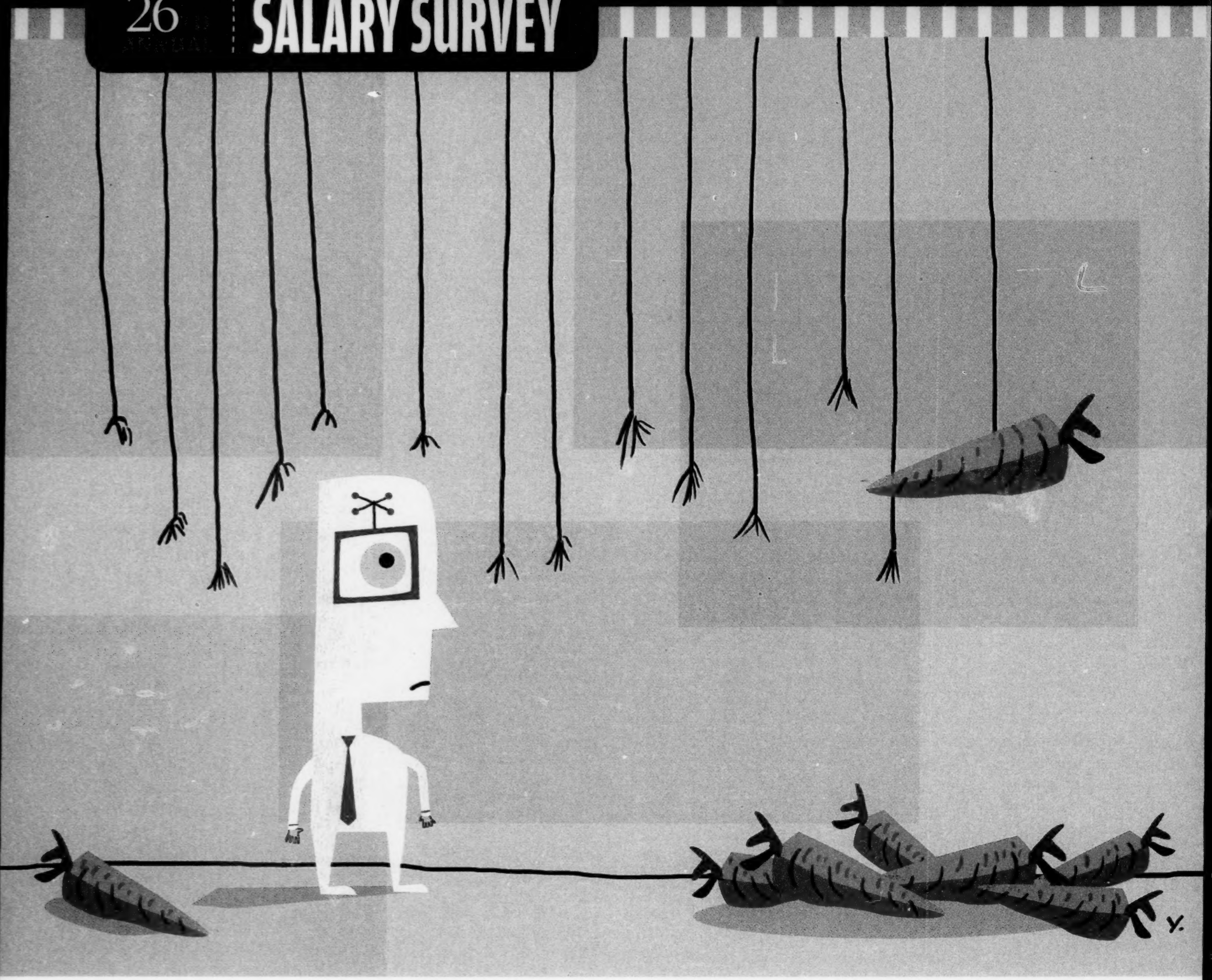
Steiner and other execs say staffers also seek out and pay for training on their own, but such efforts no longer automatically equate to extra pay at many organizations.

Jack Cullen, president of tech staffing firm Modis, says companies, particularly those aiming to hire people with expertise in cloud, security and mobile technologies, want workers with documented proof that they know the technologies and have successfully worked with them. "Their fear is that it might take too long to get someone internally trained and up to speed," he says.

That might sound discouraging, but Cullen predicts that IT shops will be more open to training people as they get deeper into projects. As the scope of an initiative expands, he says, "you'll see them train workers internally to pick up the rest of the work."

And then IT workers may finally get the hands-on experience and skills refresh that went missing during the recession. ◆

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. You can contact her at marykpratt@verizon.net.*



Benefits GO BUST

Companies have dropped many perks and bonuses, *leaving IT workers with slim pickings.* BY STACY COLLETT

[redacted]

"RICHARD," A 40-YEAR-OLD IT ARCHITECT, felt like his career path had reached its end at the financial services company where he'd worked for seven years. In a shaky economy, he was grateful to have a job at all, but when his employer eliminated matching funds in his 401(k) plan, as well as its profit-sharing program — which usually put an extra $1,000 in his pocket each year — he knew he had to go.

"Benefits were the straw that broke the camel's back," says Richard, who, like several other IT pros interviewed, was wary of revealing his real name, given the sensitivity of the topic. He is now a director of IT security at a media company where his salary and benefits are both "a bit better" and healthcare is less expensive.

Like adding salt to a wound, more than a quarter of the respondents to *Computerworld*'s 2012 Salary Survey reported that their

Continued on page 30

JAMES YANG ILLUSTRATION

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Continued from page 28

benefits had been cut in the past 12 months as a result of the slower economy. At the same time, even though average salaries were up 2.1% for 2012, average bonuses dropped by 1.1%, creating a drag on what would otherwise feel like forward motion for many workers.

The double whammy of smaller bonuses and fewer benefits could explain why more than one-third of the 4,337 IT professionals who responded to the survey said they stayed flat financially over the past two years, with another third saying they lost ground in the same time period. Only 29% reported gaining ground.

The survey data shows that healthcare benefits, tuition reimbursements and 401(k) plans were hit the hardest. These types of benefits "tend to roll around depending on the economy," says Dallas L. Salisbury, president and CEO of the Employee Benefit Research Institute in Washington.

Jeffrey L. Martineau hasn't had a raise in 30 months or a benefits boost in 10 years. Now his employer has cut the annual lump sum payment into his retirement plan from between 3% and 5% down to 1% — a $2,000 shortfall each year.

"Cutting back on my retirement funds is significant to me at this point," says Martineau, 53, director of automated information systems at Harc, a nonprofit in Hartford, Conn., that provides services for people with disabilities. "It will cause me to work longer, and when I do retire, it's not going to be as comfortable of a life as I would like."

Even so, the situation isn't dire enough to cause the 25-year Harc veteran to switch to a new employer. For him to consider moving, "it would have to be a *really* good package, and there would have to be some longevity built in," says Martineau. Besides, he adds, "I get the feeling from [Harc executives] that they would really like to bring back a higher benefit for retirement, but they just financially can't this year."

For the most part, employees have been understanding of their companies' struggles with the economy and rising healthcare costs, observers say. "They're happy to get any kind of healthcare, even if they have to pay for it. People do not want to be without healthcare," says David Foote, CEO and chief research officer at IT HR consultancy Foote Partners in Vero Beach, Fla. "Benefits matter a lot to people."

Perks Count More Than Ever

The average benefits package can account for 30% of a worker's total pay package, according to the U.S. Bureau of Labor Statistics. And while base pay mattered most to this year's Salary Survey respondents — 73% ranked it as their top priority — benefits were No. 2, mentioned by 59% of survey-takers.

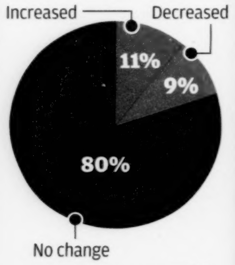
Can benefits, or lack thereof, cause IT workers to change jobs? That depends largely on what stage of life they're in. According to a 2011 MetLife study of employee benefit trends, Generation Y employees (ages 21 to 31) generally don't feel as strongly as those in other age groups that benefits are a reason to stay at a job. In comparison, Gen X-ers (ages 32 to 47), who are likely struggling with the costs of raising children, say workplace benefits are a strong reason to stay with their employers.

BONUSES TREND DOWNWARD

Overall, bonuses **dropped by 1.1%** *in the past year, putting a drag on the upward movement in salaries.*

Senior managers (BASE: 739)	**-1.1%**
Middle managers (BASE: 1,143)	**-3.8%**
IT staffers (BASE: 2,454)	**-1.1%**

How has your bonus changed from one year ago?
(BASE: 4,337 RESPONDENTS)



Average increase: 32%
Average decrease: 40%

BENEFITS UNDER THE KNIFE

Percentages of respondents who said their employers had reduced or cut the following perks in the past year:

Health benefits/ insurance	**13%**
Tuition reimbursement	**12%**
Matching 401(k) contributions	**10%**
Profit sharing	**10%**
Comp time	**10%**
Plaques/awards/ gift certificates	**10%**
Company car	**10%**

BASE: 4,234 RESPONDENTS

Charging More, Paying Less

"Patrick," a data security specialist in Iowa and a father of three, would put himself in the latter camp. "The benefits just slowly get tighter and tighter on what they allow and what the exclusions are," he says. "When you look at salary raise versus insurance price hikes, your net gain is minimal. Trying to maintain all things related to a home life becomes difficult when a company is charging you more and paying you less."

Tuition reimbursement tops the list of preferred benefits for "Daniel," a 35-year-old customer support specialist at a financial services firm in Pennsylvania who is working toward a bachelor's degree in business management. The cost of his tuition has jumped 35% in the past three years. At first, his company covered all costs for 10 to 12 credits per year, but that has been reduced to a $5,200 flat fee.

Nonetheless, neither Gen X-er plans to leave his job solely for better perks. Likewise, young baby boomers (ages 46 to 54) don't appear to be a serious flight risk either, but job dissatisfaction could lead them to be less engaged and a potential threat to productivity, according to the MetLife study.

As for older boomers, many are finding they're financially unprepared for retirement. Derick Moore, 68, a senior staff programmer at LSI, a semiconductor and software design firm in Milpitas, Calif., is facing rising healthcare costs and contemplating what that will mean after retirement.

For doctor visits, he pays "a couple thousand [dollars] a year" out of pocket, and his health insurance premiums have risen from $80 per paycheck in 2009 to $115 in 2012. Overall, Moore insists he's "a happy camper" at his company of almost 16 years. He's just wary of the rising percentages he's being asked to pay.

Tech employees who are frustrated enough to consider switching jobs may want to look for a new employer that approaches benefits from a generational perspective and with more choices, flexibility and customization, say HR professionals.

> **When I do retire, it's not going to be as comfortable of a life as I would like.**
>
> **JEFFREY L. MARTINEAU,** DIRECTOR OF AUTOMATED INFORMATION SYSTEMS, HARC

Employees should check out whatever voluntary benefits their companies offer — including accident insurance, additional life insurance or customized retirement plans — and take advantage of those that fit their current lifestyles. On the healthcare side, high-deductible/lower-cost plans and health savings accounts can take some pressure off employees' paychecks.

Those concerns notwithstanding, Foote says the benefit that employees should seek out most is career advancement. He reports that most IT professionals he has surveyed "would work for lower pay if they could get somewhere in their careers."

Honing skills that are in demand and taking on new responsibilities are the best ways to insure against an uncertain job market. If you have those goods, Foote says, you'll be well positioned to bargain for a bigger salary and better benefits. ◆

Collett *is a* Computerworld *contributing writer. You can contact her at stcollett@aol.com.*

Benefits Keep IT Staff Engaged

THE ECONOMY has taken a toll on many companies' benefits programs, but some employers say offering perks is worth the cost. At the University of Pennsylvania – one of the top benefits providers on *Computerworld*'s 2011 Best Places to Work in IT list – benefits not only keep employees from moving on, but also keep them engaged, according to Jack Heuer, vice president for human resources.

The university has managed to maintain its healthcare, 403(b) and professional development benefits over the past few years, and it has added a $5,000 adoption benefit and "a substantial subsidy" for third-party child care or adult care for up to 10 calendar days a year – all while keeping undergraduate tuition at its lowest percentage increase in 40 years.

Heuer credits Penn's ability to increase benefits to a "strong management philosophy" that was established before the economic downturn. "We need to attract and retain employees," he says. "We recognize that our IT staff could work anywhere."

"We're doing this because of employee engagement, which helps build the university and its academic mission," he adds. "Engaged employees make the university a better place."

– STACY COLLETT

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— OPINION

RACHEL RUSSELL

Motivate Workers With Salary, Skills and Strategy

EVERYONE CARES about compensation, and almost everyone feels they deserve to earn more than they make. So what happens if your company can't afford to entice new talent with significant raises or high-dollar salaries?

> IT professionals want to be connected to initiatives that the organization cares about most.

TEKsystems speaks with more than 100,000 IT professionals every week, and we conduct quarterly research as well. According to our findings, IT professionals rank career development as their top priority — even higher than compensation.

They want to get involved with the latest trends and the greatest projects — which is incongruous when you consider that more than 80% of IT's time is devoted to keeping the lights on (KTLO).

Fortunately, there are steps you can take to narrow the gap between what IT shops have to do and what employees want to do. And those steps can boost your IT organization's appeal to prospective employees while elevating its performance and business value.

Set a long-term vision with the business. IT professionals want to be connected to initiatives that the business cares about most. But if they're always bogged down in the mire of KTLO operations, it's unlikely they'll be able to take on strategic initiatives with much success. To break that cycle, IT leaders must build relationships with the business that position them to know the strategic vision as far out as possible. From there, you can start a conversation around important trade-offs between KTLO and strategic IT initiatives.

Conduct strategic workforce planning. Since the economic downturn, many IT professionals feel like they've been asked to do it all. They're fatigued, and many resent the drain on their professional and personal lives. A thoughtfully crafted workforce plan can alleviate bandwidth issues and allow your IT departments to perform work at a lower cost without sacrificing quality.

Before signing up for more work, smart IT leaders carefully consider which tasks can be handled in-house (by current staffers or new hires, or through training) and which should be handled via alternative-delivery mechanisms (staff augmentation, managed services, project services or outsourcing).

Appropriate use of the latter will free your staff from commoditized tasks so they can focus on the most strategic, interesting and rewarding work.

Skill-build toward the future. IT professionals know that in order to be productive and have strategic impact, they need more than technical competence; they need to understand business operations and goals, process management and interpersonal communication. If you tap into this desire, you can limit resentment over compensation and maximize the business value achieved by your IT team.

By taking a skills inventory and comparing it with the competencies your organization needs to achieve its long-term strategy, you can begin to craft development plans for your IT staff that offer relevant returns for the business. Employees will feel more committed to your organization if you not only give them a vision of the future, but also make an investment in their ability to help the organization get there.

In short, to attract the brightest new hires and keep your top performers around for the long haul, compensate them, yes, but also offer the thrill of breaking new ground and contributing to the grandest business priorities. ◆

Rachel Russell oversees research at TEKsystems, an IT staffing, human capital management and IT services consultancy. Visit *www.teksystems.com* or follow @TEKsystems on Twitter.

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Career Watch

PHOTO: ISTOCK

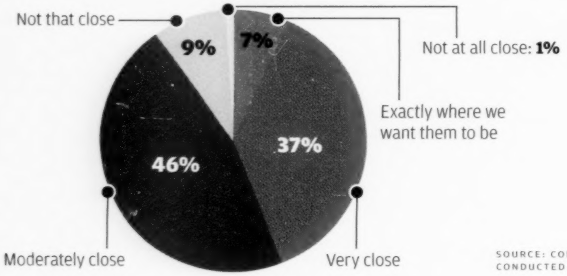
Sounding the Skills Gap

As is evident from the findings of *Computerworld*'s 2012 Salary Survey (pages 15-32), there's a gap between the skills IT workers have and the tech skills employers are seeking. And a recent CompTIA survey offered further evidence of that gap, finding that only 7% of companies consider the skills possessed by their IT staffs to be exactly where they want them to be.

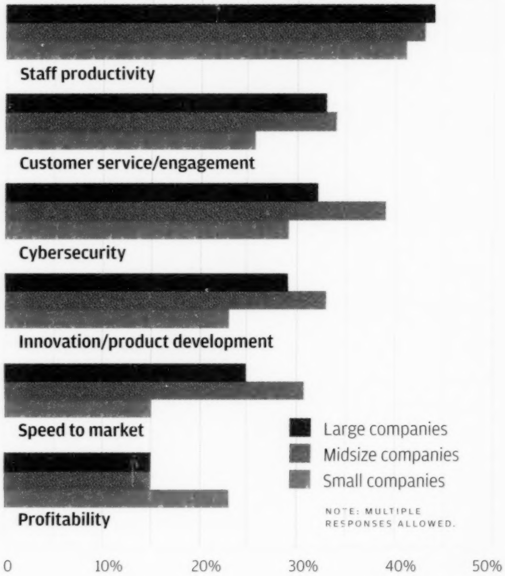
Among the topics the CompTIA survey explored are the IT skills that companies consider to be most important, the business areas that the organizations feel are affected by the skills gap, and the perceived causes of the gap.

These charts offer a look at some of the highlights of CompTIA's findings.

How close are your IT staff's skills to where you want them to be?



What business areas does the IT skills gap negatively affect in your organization?



NOTE: MULTIPLE RESPONSES ALLOWED.

SOURCE: COMPTIA STATE OF THE IT SKILLS GAP SURVEY OF 500 U.S. IT AND BUSINESS EXECUTIVES, CONDUCTED ONLINE IN DECEMBER 2011 AND JANUARY 2012.

Q&A

Greg Pierce

The cloud strategy officer at Tribridge discusses **staffing needs after moving to the cloud.**

When a company moves IT operations to the cloud, what does that mean for its IT staff? It's a misconception that moving to the cloud means the company will clean house of all current staff. However, the current IT staff does need to hone new skills. They need to consider the move to the cloud as a challenge, embracing the expansion of their skill set. Their day-to-day tasks will definitely morph, but if the IT employees can remain open to adapting their skills, they are going to be far more valuable to the organization and less likely to be phased out.

What kinds of adjustments are needed in training and other areas? Decision-makers need to clearly communicate from the outset what cloud provisioning will mean for the organization's employees. Proper, formal training is crucial to the future success of the current IT staff, and this expectation should be communicated. Areas of focus for the cloud should be project management and interpersonal communication, because the in-house IT staff will be dealing directly (and more frequently) with both users and the cloud provider.

How can IT staffers proactively prepare for what might be an inevitable shift to the cloud? I've seen a lot of resistance to the cloud by IT professionals because they believe they will no longer have a position within the organization. Instead, they need to take a proactive approach to researching cloud solutions that fit their organization's goals and mission so that they can become an integral part of the decision-making process. It's a mindset. It's not a matter of *if* companies are going to the cloud, but rather *when*.

– JAMIE ECKLE

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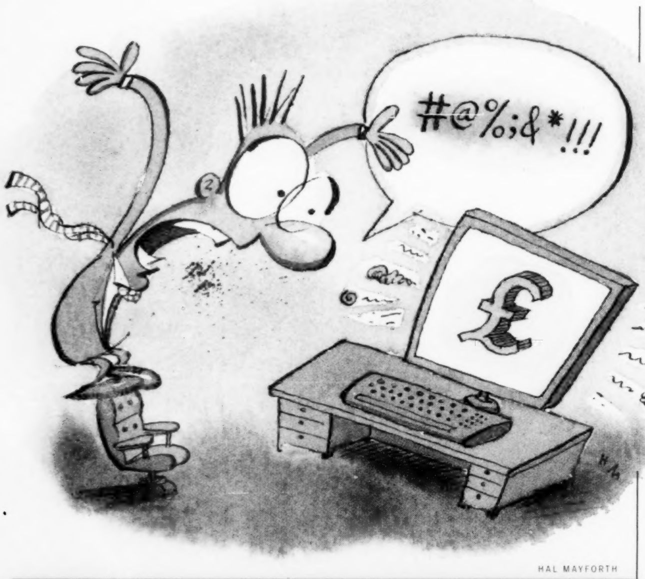

HAL MAYFORTH

Making a Hash of It

While this pilot fish is upgrading a customer to a newer version of his company's CRM software, he discovers the need to use the comma and pound-sign characters from the old Hayes-modem command to properly route telephone calls to specific voice-message boxes. "I made the necessary changes to the code and, after testing, sent them on to our certification team in India for formal testing," says fish. "In my explanation to the testing group, I mentioned the addition of the comma and pound sign to the list of valid input characters." Next morning fish gets the testing results: The comma works, but the pound sign doesn't. Puzzled, fish spends the next hour checking code and running tests before he finally looks at something the testers attached to their results: a screen shot of the error message. Sighs fish, "There, behind the error message pop-up, the text box in question contained a single character – not #, the symbol most Americans call the pound sign, but £, the symbol for the British pound."

Stuck With Another Nontech Job

Family-owned company is swallowed up by a megacorp, and the new owner needs to account for all assets. The corporate solution: Put a bar-code label on every item. And the three-person IT staff gets that task, because the bar-code scanner is technology, right? What's worse, *everything* has to get a bar code – down to staplers, hole punches and desk calendars. "I'll let you guess how long the bar codes remained on items that were handled or moved regularly," says a pilot fish on the team. "The plastic mats under office chairs were particularly bad places for a sticker. For months afterwards, it wasn't uncommon to see someone walking around with a bar code stuck to them. We considered scanning and reporting them, but figured the accountants at HQ wouldn't have the sense of humor to appreciate that."

Almost Like He Never Left

IT pilot fish who's solely responsible for a specialized server is laid off one Friday afternoon. "The company planned to have someone from another location three hours away do remote management and come in as necessary," says fish. "In accordance with company policy, they escorted me off the premises and told me I could come back under escort on Monday to collect my personal property. They also found somebody who knew how to remove all privileges from my personal account and change the password on the system management account. On Monday I was escorted back to my desk and left alone to box up my stuff – and I found my desktop terminal still logged in to the system management account. I asked the department manager to step over for a short tutorial about termination procedures."

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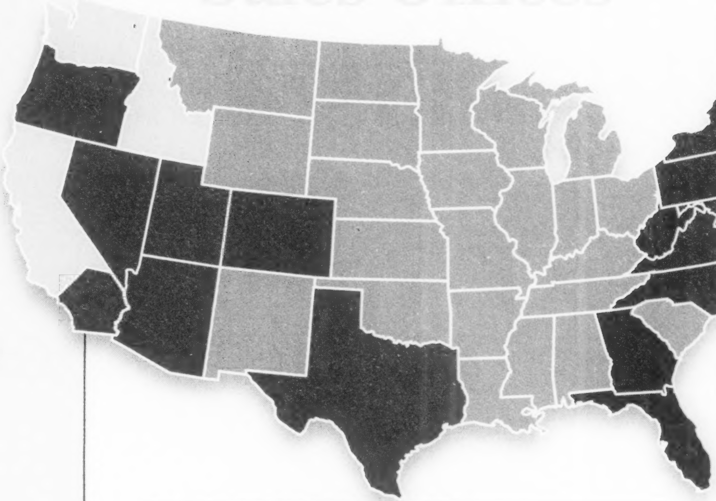

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The CIO Enters The Era of Disruption

New C-level positions will perform tasks perceived as not being adequately addressed by incumbent CIOs and CMOs.

WELCOME TO THE AGE OF DISRUPTION.

Organizations are experiencing a frenzy of restructuring. Currently, 60% of the companies in the Global 2000 are replacing the leaders in their top ranks, including their CEOs, CFOs, CIOs and COOs, as well as their heads of marketing, legal and human resources. Historically, in any quarter, one can expect just 10% to 20% of Global 2000 companies to take such action.

At the same time, 20% of the Global 2000 are experimenting by creating new leadership titles, such as chief digital officer, chief customer officer and chief analytical officer/head data scientist. As those emerging titles suggest, IT and marketing will be the functions most disrupted.

CIOs seem to recognize this. During the CIO Practicum program at the University of Kentucky and the IT Value Studio series at Florida State College at Jacksonville, researchers asked attendees to come up with a name for the era we're about to enter. The general consensus was "the era of disruption." One erudite CIO went so far as to quote Valentine, a character in Tom Stoppard's play *Arcadia*, who says: "It makes me so happy. To be at the beginning again, knowing almost nothing.... The future is disorder. A door like this has cracked open five or six times since we got up on our hind legs. It's the best possible time to be alive, when almost everything you thought you knew is wrong."

It remains to be seen whether that happiness is widely shared. Just about every function in the enterprise is in the midst of a fundamental shift.

But the emphasis on IT and marketing is well placed. As Peter Drucker wisely observed many years ago: "Because the purpose of business is to create a customer, the business enterprise has two — and only two — basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs."

The new C-level positions are being created to handle tasks perceived as not being addressed adequately by incumbent CIOs and chief marketing officers. Michael Moon, co-author of *Firebrands: Building Brand Loyalty in the Digital Age*, told the CIOs at the CIO Solutions Gallery at Ohio State University that we have entered a new age of marketing. He related how a professor of branding at Harvard Business School had this fact hammered home by his 13-year-old daughter when they were on their way to an Apple store. "Dad, you don't know anything about brands," she told her father, the erstwhile world expert. "If you have to advertise a product, there is something wrong with it." This is the world and the customer set that many chief marketing officers fail to understand. It is why so many companies feel the need for a chief digital officer — someone to connect with, engage and delight the current age's always-on, digitally savvy customers.

For their part, chief analytics officers are being asked to generate insights and formulate profitable actions from externally generated social and mobile data, as well as all the data that CIOs have been gathering from the extensive and unloved systems of record deployed over the past two decades.

Chief customer officers are responsible not only for ensuring positive customer experiences, but also for shifting corporate focus, so that processes and behaviors derive from customer needs rather than internal needs.

It will be fascinating to watch how these three new C's play with the old C's. ◆

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